

**A DATABASE MINING SYSTEM AND METHOD FOR
COVERAGE ANALYSIS OF FUNCTIONAL VERIFICATION
OF INTEGRATED CIRCUIT DESIGNS**

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ABSTRACT OF THE DISCLOSURE

Database mining, analysis and optimization techniques in conjunction with the
model-based functional coverage analysis are used to turn raw verification and coverage
10 data into design intelligence (DI) and verification intelligence (VI). The required data and
attributes are automatically extracted from verification, simulation and coverage analysis
databases. Design finite state machine extraction, design functional event extraction, and
automatic coverage model generation and optimization techniques are applied to the design
HDL description. Coverage model tuning and optimization directives, as well as test spec
15 tuning and optimization directives are generated based on the analysis and mining of various
verification, simulation, and coverage databases. An integrated web-based interface portlet is
used for access, analysis and management of the resulting databases, generated reports and
verification directives. Dissemination rules are used to automatically generate and distribute
analysis reports and verification directives to engineers at wired or wireless interface devices
20 via Internet or Intranet.